https://doi.org/10.57127/kpd.26024438m0000110

# Internet-based grief therapy program for bereaved individuals at risk: A case series study

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**Keywords**
grief, loss, internet-based, prolonged grief, case series

**Abstract**
Interest in internet-based interventions has increased considerably. The effectiveness of these applications continues to be investigated for the treatment of Prolonged Grief Disorder. This study includes preliminary findings of the internet-based and therapist-supported prolonged grief intervention program developed in Turkish. The internet-based program consists of 10 written sessions, and after each session the participants receive written feedback from the therapist. The program takes approximately 6-8 weeks. The preliminary findings of the program were handled in a proof-of-concept study style based on a case series design. Self-report measures were taken from the first eight participants who completed the program at four different times (pre-test, post-test, 1st and 3rd month follow-ups). In addition, the written contents of the first and last sessions were analyzed by content analysis. As a result of the descriptive findings, remarkable decreases were observed in traumatic grief, global meaning violation, depressive symptoms, and stress levels in a significant part of the participants between pre-post and follow-up measurements. Also, five of the participants had considerable increases in meaning reconstruction scores. In addition, the results of the content analysis indicated that following the intervention, the bereaved individuals expressed less negative and more positive content, as expected. These two data show that the intervention program is promising in reducing the symptoms of Prolonged Grief Disorder in bereaved individuals and may yield good results with controlled designs for a broader range of participants.

**Anahtar kelimeler**
yas, kayıp, internet temelli, uzamış yas, vaka serisi

**Öz**
**Risk altındaki yaslı bireylere yönelik internet temelli yas terapi programı: Bir vaka serisi çalışması**
İnternet temelli müdahalelere olan ilgi oldukça artmaktadır. Bu uygulamalar, Uzamış Yas Bozukluğu tedavisi için de etkinliği araştırılan yöntemlerden birisidir. Bu çalışma, Türkçe olarak geliştirilen internet temelli ve terapist destekli uzamış yas müdahale programının ön bulgularını içermektedir. İnternet temelli program 10 yazılı oturumdan oluşmakta ve her oturumdan sonra katılımcılara uygulayıcı tarafından yazılı geri bildirim verilmektedir. Program yaklaşık 6-8 hafta sürmektedir. Programa ilişkin ön bulgular, bir vaka serisi desene dayalı olarak kavram kanıtı çalışması tarzında ele alınmıştır. Programı tamamlayan ilk sekiz katılımcıdan dört farklı zamanda (ön test, son test ve 1. ve 3. ay izlemler) öz-bildirime dayalı ölçümler alınmıştır. Ayrıca, ilk ve son oturumun yazılı içerikleri içerik analiziyle incelenmiştir. Betimsel bulgular sonucunda, katılımcıların önemli bir kısmında ön-son ölçümler ve takip ölçümleri arasında travmatik yas, genel anlamdaki bozulmalar, depresif belirtiler ve stres düzeylerinde belirgin azalmalar gözlenmiştir. Ayrıca, vakaların beşinde anlamın yeniden yapılandırılması puanlarında önemli artışlar gözlenmiştir. Ayrıca içerik analizi sonuçları, yaslı bireylerin müdahale sonrasında beklendiği gibi daha az olumsuz içerik ve daha fazla olumlu içerik ifade ettiğini göstermiştir. Bu iki veri, müdahale programının Uzamış Yas Bozukluğu semptomlarını azaltmada umut verici olduğunu ve daha geniş bir katılımcı yelpazesi için kontrollü desenlerde iyi sonuçlar verebileceğini göstermektedir.

**To cite:** Baş, S., & Yorulmaz, O. (2024). Internet-based grief therapy program for bereaved individuals at risk: A case series study. *Journal of Clinical Psychology Research, 8*(1), 101-113.

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***Received*** *Dec 20, 2022,* ***Revised*** *Mar 21, 2023,* ***Accepted*** *Mar 22, 2023*
***Author's Note:*** *This study was supported by the Scientific and Technological Research Council of Turkey (TUBITAK) as project 1001 with the number 220K176. We would like to thank TUBITAK for its valuable support.*

The death of a loved one is undoubtedly one of the most important turning points in our lives. While many people who have experienced a loss go through a healthy grieving process, a significant group of about 7-10% continue to experience a longer and more complex grieving (Szuhany et al., 2021). This problem was first defined in ICD-11 as a separate diagnosis called Prolonged Grief Disorder (PGD; World Health Organization [WHO], 2018). As a result of recent studies, PGD was included as an independent disorder in the text revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR; American Psychiatric Association [APA], 2022), which is another classification system. It is clear that PGD is accepted as a separate diagnosis from other psychiatric disorders.

Previous studies have drawn attention to the effects of various risk factors in long-term grief, including variables related to the person who died and personal or interpersonal factors (Stroebe et al., 2006). Especially if the loss occurs suddenly and unexpectedly, it is very likely that bereaved individuals will experience the consequences at a traumatic level (Buckley et al., 2015). For example, with the Covid-19 epidemic, which has affected the whole world recently, we have witnessed thousands of people die suddenly and unexpectedly every day around the world. Also, due to restrictions, bereaved persons could not perform many funerals and other rituals as they should have, and people had limited access to the social support resources they expected (Cardoso et al., 2020). Although it seems likely that the loss experiences experienced during this period may cause various psychological problems, researchers have claimed that prolonged grief may become an important health problem worldwide (Eisma et al., 2020).

The loss of a loved one brings with it various health problems. In addition to physical and somatic complaints, sleep and appetite problems, especially after the loss of a spouse, increased mortality rates in both the short-and long-term draw attention (Stroebe et al., 2007). In addition, various anxiety disorders, especially post-traumatic stress disorder and depressive disorders have a comorbid course with PGD (Lenferink et al., 2017; Marques et al., 2013; Simon et al., 2007). For this reason, support systems and intervention programs could be useful that enabling individuals at risk to continue their grief healthier before the loss-related process becomes complicated and chronic (Diolaiuti et al., 2021). From this point of view, the need for intervention programs to be carried out on the axis of the problem of prolonged grief may increase in the future.

Today, internet-based interventions have been applied in the treatment of many psychological problems from anxiety and depression (Pasarelu et al., 2017) to chronic somatic diseases (Bendig et al., 2018), and substance use (Staiger et al., 2020). In these studies, internet-based programs indicated very effective results. Research also showed that therapist-supported interventions produced results as effective as conventional face-to-face treatments (Andersson et al., 2014, 2019).

Beyond these topics, internet-based methods have also been studied for a long time for prolonged/complicated grief. We see that the first application was a German programme by the name of Interapy (Lange et al., 2000). Wagner et al. (2005) detailed Interapy, which consists of three stages (self-confrontation, cognitive reappraisal, and social sharing), specifically for complicated grief, and aimed to reduce grief symptoms. Interapy is a program consisting of 10 written sessions implemented over five weeks. Empirical research findings indicate that interventions based on the Interapy model yield good results (Kersting et al., 2013; Van der Houwen et al., 2010; Wagner et al., 2006). Another important study was carried out by Litz et al. (2014) with an English protocol called HEAL (Healthy Experiences After Loss). Unlike Interapy, HEAL, which is based on a cognitive-behavioral basis, includes components such as psychoeducation and guidance to reduce the difficulties and declines in functionality associated with prolonged grief. In this context, HEAL consists of 18 online sessions planned to last six weeks. Another internet-based initiative was implemented in Dutch as two separate programs, exposure therapy and behavioral activation (Eisma et al., 2015). Exposure therapy in this application was adapted from an effective face-to-face cognitive behavioral intervention program (Boelen et al., 2007) and was administered as homework assignments for 6-8 weeks via e-mails. In addition to the effective results in prolonged grief and depression symptoms, high dropout rates (59%) in the behavioral activation group draw attention. Another recent study has been developed for bereaved individuals in case of separation or loss of spouse with an application called LIVIA in French (Brodbeck et al., 2019). The program is theoretically based on the task model of mourning (Worden, 2018) and the dual process model of coping with bereavement (Stroebe and Schut, 1999). LIVIA consists of 10 sessions and is administered for 12 weeks. In these four intervention programs, written feedback and supportive e-mails are sent to the participants at regular intervals.

Apart from treatment studies, various digital tools have been implemented in order to alleviate the difficulties experienced by bereaved people and to increase compliance with the grieving process. For example, Living Memory Home creates a digital space for bereaved individuals, where they can memorialize their loss and express both their memories and their positive and negative feelings (She et al., 2021). In another noteworthy digital application, it is planned to provide emotional support to people who struggle with the feeling of loneliness during the grieving process (Xygkou et al., 2023). It is examined how the virtual conversations of bereaved individuals with a chatbot technology will affect the feeling of loneliness.

As summarized above, there are important international interventions using internet-based methods in the treatment of PGD. However, there is no internet-based or face-to-face grief intervention protocol in Turkish yet. This situation limits the access of bereaved individuals to effective programs. The need for online tools that will remove time and place limitations is becoming more evident, especially as experienced in times such as pandemics or natural disasters. This indicates an important need for an effective Turkish program for both the bereaved people and researchers. In addition, the intervention programs outlined above for the treatment of PGD are effective practices in reducing prolonged grief or other related symptoms, but they focus on different components of the grieving process. For example, Interapy applications mainly focus on techniques such as exposure and cognitive restructuring, while HEAL has more supportive content. For these reasons, three-stage research was planned to create a Turkish intervention program that has effective components and can be an important alternative to international practices. First of all, it is planned to develop a prolonged grief intervention program which brings together effective components and techniques, and then to transfer this program to the internet environment and finally to carry out a study on its effectiveness.

In order to realize the first aim, previous intervention programs and grief theories in the field were examined in detail and important theories and techniques were tried to be integrated in one program with an eclectic approach. The main structure of the program, which has a cognitive behavioral content, was theoretically based on the task model of mourning (Worden, 2018), just like in LIVIA. Therefore, (i) accepting the reality of the loss, (ii) experiencing the pain and the other emotions of the grief, (iii) adapting to the world without the deceased, and finally (iv) maintaining bonds while life continues are the main objectives of the program.

The rejection or denial of the reality of the loss is accepted as one of the main indicators of prolonged grief (Prigerson et al., 1999; Shear, 2015). In order to support people to create this reality, the “impact statement” technique used by Resick et al. (2017) in the treatment of Post-Traumatic Stress Disorder (PTSD) was used. In addition, the imaginal exposure technique, which is also known in the treatment of PTSD (Foa et al., 2007) was included in the program in written form in order to process the day of the loss occurred. In this way, people will be able to deal with how the post-loss process affects their world of meaning and the most difficult day of the loss in detail.

Negative cognitions (“It feels like if I express what's on my mind and what's in my heart, I'll fall apart and no one can pick me up.”) of bereaved individuals are accepted another condition associated with PGD (Boelen, 2006). In this regard, the "stuck points" that the impact statement will point out are expected to present a picture of people's maladaptive cognitions and behaviors. This picture will reveal the barriers to accepting the reality of loss, experiencing emotions and organizing the new life. Cognitive restructuring technique was included in the program in order to cope with these maladaptive thoughts that hinder the natural grieving process.

Another challenging issue for people in prolonged grief is taking steps to reorganize their new lives. This situation is considered as a restoration-oriented stress factor in the dual process model of bereavement (Stroebe and Schut, 1999). In order to guide people at this point and support them to take action, the value-oriented life principle of Acceptance and Commitment Therapy (ACT) was included in the program (Hayes et al., 1999). It was thought that the targets to be determined in line with the values will reactivate the people and motivate them to do pleasant things. In this way, it was aimed to reduce the anxious or depressive avoidance that Boelen (2006) emphasizes. In the whole of the intervention program, important emphasis was placed on the reconstruction of meaning in the grieving process. It has been stated that restructuring of meaning has a central role for healthy mourning in the post-loss process (Neimeyer, 2000). In this direction, in the semi-structured feedback delivered to the clients, attention was drawn to the developments and obstacles to sense making, benefit finding, and identity change, which are the three components of meaning reconstruction (Gillies and Neimeyer (2006).

Within the scope of this study, the first findings of the intervention program, whose general framework was presented above will be included. The obtained data constitute the first stage of an ongoing comprehensive study. Therefore, in this context, only the data of the first participant group who completed the program will be included.

## METHODS

### *Participants*

Bereaved individuals who lost a first-degree family member at least six months ago were included in the study. In order to make the study as inclusive as possible, some criteria were applied more flexibly. Such as, no restrictions were applied on closeness to the loss, but attention was paid to the level of grief intensity experienced by the individuals. For this purpose, scores of the Traumatic Grief Inventory Self-Report were considered to determine the level of grief intensity (Boelen & Smid, 2017). Although scores of 61 and above were specified as the cut-off point for a possible diagnosis of PGD in the original study, it was thought that it would be more appropriate to include those with a median score of 47 and above, based on the data of the Turkish adaptation study of the

inventory (Baş et al., 2020). On the other hand, receiving any psychological or psychiatric support during the study, reporting a substance use problem or serious suicidal thoughts were among the exclusion criteria (See Figure 1). Participants were reached through online announcements made on social media platforms.

Thirteen participants meeting the specified inclusion and exclusion criteria were included in the intervention program following the stages of pre-interview and consent. As noted below, participants except one completed all measurements at four different time points (See Figure 1). Seven participants are women, the average age of the participants is 37.7 (*SD* = 10.05) years, and the average time since the loss is 22.3 (*SD* = 50.40) months. Seven of the participants have a bachelor's degree and one has a master's degree. Among them, only four participants continue their working life actively. Three of the participants experienced loss of mother, the other three experienced loss of spouse, and the remaining two experienced loss of father (Table 1).

### *Procedure*

The researcher conducted an online pre-interview with the participants determined to be suitable for the study before the intervention program. This meeting served purposes such as the acquaintance phase, establishing cooperation, and giving information about how to use the web program. In this way, we considered that the continuity and commitment of the program would increase. In order to serve the same purpose, a telephone interview was held following the session 5 (mil-term evaluation) and session 10 (termination). All these preliminary interviews and the ongoing intervention program were conducted by a single researcher (clinical psychologist) under supervision. Following the information phase, the participants were asked to register as a member on the relevant website. Only the registered participants were given access to the program pages. In this way, only authorized participants can access the program pages, and no member can have information about the other members.

Before starting the program, participants were directed to a pre-intervention stage. This stage includes the clarification text regarding the process and psychoeducational pages. The participants were asked to review and approve the clarification. Information about the process was given in the text, and approval was received on privacy, security, and data sharing. After approval, they could proceed to the psychoeducation page. In this page, there were various information pages about internet-based applications and normal or prolonged grief process. They were asked to review these pages carefully and confirm that they had reviewed them. After this confirmation, the permissions for the session page were opened. Thus, they entered the intervention stage. At this stage, there are 10 written sessions. The sessions proceed in sequential order and no entry is granted to the other until the previous session was completed. If the participant was late in responding to the session, a reminder message was sent to them. After each session, feedback was sent to them by the same researcher via e-mail. Feedback constitutes the therapist-supported side of the program. Although its content was largely structured, it included additional explanations about the grief process, points to be considered, directions for awareness, or various recommendations and suggestions regarding the situation of the participants. In this way, 10 sessions were completed for a total of 6-8 weeks.

Participants completed all self-report measurements (Traumatic Grief Inventory Self-Report; Grief and Meaning Reconstruction Inventory; Global Meaning Violation Scale; Depression, Anxiety, and Stress Scale-21) at four different time points: before the intervention (T1), after the intervention (T2), and at the 1$^{st}$ month (T3) and 3$^{rd}$ month (T4) following the end of the intervention. Moreover, all procedures were approved by the Ethics Committee of the Dokuz Eylül University Faculty of Letters (03.12.2020/41-8).

### *Measures*

***Demographic Form*** In this form, there were questions about the closeness of the loss, the reason for the death, the nature of the relationship with the deceased person as well as typical demographics. Form also includes other questions about substance use status, whether the person has suicidal thoughts and any psychiatric diagnosis.

***Traumatic Grief Inventory Self-Report (TGI-SR)*** Inventory was developed to assess the severity of traumatic grief symptoms and thus the intensity of grief (Boelen & Smid, 2017). TGI was created according to the potential diagnostic criteria of Persistent Complex Bereavement Disorder (APA, 2013). It consists of 18 items on a 5-point Likert scale. The original form has a one-dimensional structure with total score ranging from 18 to 90. Turkish version of the TGI was used in the current study (Baş et al., 2022).

***Grief and Meaning Reconstruction Inventory (GMRI)*** This is a measurement tool developed to evaluate giving meaning to the world after a loss, learn something from the loss, and assess personal growth and adaptation (Gillies et al., 2015). It is scored in a 5-point Likert type scale. GMRI has five sub-dimensions: continuing bonds, personal growth, emptiness and meaninglessness, sense of peace, and valuing life. The Turkish version of the scale consists of 27 items, and it is also possible to use the inventory as one-dimensional structure with its total scores ranging from 27 to 135 (Keser & Işıklı, 2018).

***Global Meaning Violation Scale (GMVS)*** It was cre-

ated to evaluate the violations in general (violation of beliefs and violation of goals) after exposure to a traumatic or stressful life event (Park et al., 2016). It consists of 13 items and three sub-scales with 5-point response options. The scale is scored between the range of 13 and 65. GMVS was adapted to Turkish by Acet et al. (2020) and the original structure was preserved.

***Depression, Anxiety, and Stress Scale-21 (DASS-21)*** The short form of the scale consists of 21 items, evaluates the symptoms of depression, anxiety, and stress in the last week (Lovibond & Lovibond, 1995). Each dimension is evaluated with 7 items and is scored on a four-point scale between the range of 7 and 28. In the study of the psychometric properties of the Turkish version of the scale, it was reported that the original 3-factor structure gave good results (Yıldırım et al., 2018).

***System Usability Scale (SUS)*** It is a 10-item self-report measure and used to evaluate participants' system experiences (Brooke, 1996). There are items like "I thought this system was easy to use.", "I think I will need the support of a more technical person to use this system." in the form and scores with a 5-point rating between the range of 10 and 50. It was adapted into Turkish by Demirkol and Şeneler (2018). This measurement tool was used to evaluate the usability and convenience of the website platform where the intervention program will be carried out by the participants.

### *Treatment Program*

The program consists of 10 sessions supported by therapists, entirely written on a website, and lasts 6-8 weeks. There is no face-to-face interaction with the therapist. Each session has specific tasks, and participants are expected to respond in writing. At the end of each session, written feedback will be given to the individuals via e-mail by the therapist. Therefore, the therapist will be involved in the process with this personalized feedback.

In the first session, the impact statement is used (Resick et al., 2017), and participants are asked to describe what has changed in their lives after the loss and their thoughts about themselves, others, and the world. Following this session, the therapist determines the stuck points ("I don't want to cry in front of others, I prevent myself."), and sends them in a list as feedback to the person. Feedbacks include annotations in accordance with the purpose of the sessions. In addition, attention is drawn to the points that the participants should consider to, the issues that they need to be aware of, and various recommendations or suggestions are made when necessary. Although the feedback is largely structured, it also contains different content specific to the situation of the participants. For example, in the first feedback, it starts with a description of the task model of grief (Worden, 2018), which forms the main line of the work, and if possible, appropriate examples from the participant's statements in this session are added for each task. Afterwards, a list of stuck points that could be an obstacle to the grieving process is presented. For the next session, he/she is asked to choose one of them and work through it in accordance with the instruction. In the second session, a cognitive restructuring exercise is administered on one of these stuck points. Participants are expected to conduct a study on forms aimed at providing a different perspective on irrational thoughts that have the potential to create an obstacle to the grieving process. First, the irrational thought structure is shown in an exemplary form over the thought-emotion-behavior triangle and alternative thoughts are listed. Afterwards, the participant is asked to do a similar work for one of the stuck points chosen on the blank form. In session 3, an exposure exercise is performed. The participant is asked to describe the day the loss occurred, and the most difficult feelings and thoughts about that day are exposed. The fourth session focuses on unfinished business with an imaginary encounter, while in the fifth session, the participant is expected to write a letter to a person (real or imaginary) in a similar situation and try to present themselves with a new perspective.

The following sessions contain contents for the organization of a new life without loss. In the sixth and seventh sessions, a study is made on the value-focused life on the ACT axis. Participants are informed about the distinction between values and goals, and then they are asked to determine their own life values and related goals through the forms. In the seventh session, they are asked to make short-term planning based on a chosen life value and related goal. The eighth session focuses on the internal (e.g., seeing oneself as orphaned, helpless, unloved, etc.) and external (e.g., having to live alone, payments, taking care of children if any, economic problems etc.) adjustments that Worden (2018) pointed out. Therefore, these three sessions (6, 7, and 8) focus on the reorganization of life. In the remaining two sessions, the emphasis is on the continuing bond and farewell with the deceased. The ninth session is about the emotional position of the deceased person. The last session is not only a farewell session but also a wrap-up session in which the meaning of the loss is re-evaluated.

### *Data Analysis*

Since the data obtained from eight participants will be presented in a proof-of-concept study (POC) style, no statistical analysis was performed. POC study designs are commonly used in early stages of Phase II clinical trials, where treatments or drugs are administered for the first time in a target patient group. It provides in-

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**Table 1. Demographics and Total Scores at Four Different Time Points**

| Participants | P1 | P2 | P3 | P4 | P5 | P6 | P7 | P8 |
|---|---|---|---|---|---|---|---|---|
| Age | 22 | 29 | 51 | 26 | 36 | 42 | 40 | 25 |
| Gender (Male or Female) | F | M | F | F | F | F | F | F |
| Deceased is | Mother | Father | Husband | Father | Husband | Husband | Mother | Mother |
| Time since loss (month) | 7 | 7 | 25 | 9 | 153 | 11 | 8 | 13 |
| **Measures** | | | | | | | | |
| Traumatic Grief Inventory Self-Report (TGI-SR; min-max = 18-90) | | | | | | | | |
| T1 (pre.) | 58 | 57 | 63 | 69 | 66 | 62 | 71 | 80 |
| T2 (post.) | **34** | **38** | 51 | **48** | **29** | **42** | **38** | 76 |
| T3 (1. month) | **30** | **36** | 58 | **44** | **33** | **43** | **39** | **69** |
| T4 (3. month) | **34** | **33** | - | **40** | **24** | **47** | **42** | **51** |
| Grief and Meaning Reconstruction Inventory (GMRI; min-max = 27-135) | | | | | | | | |
| T1 (pre.) | 111 | 112 | 94 | 83 | 109 | 93 | 60 | 90 |
| T2 (post.) | 113 | 110 | 104 | **100** | **120** | **103** | **83** | 89 |
| T3 (1. month) | 105 | 108 | 96 | **105** | **115** | **103** | **81** | 89 |
| T4 (3. month) | 105 | 102 | - | **107** | **119** | 96 | **75** | **109** |
| Global Violation Scale (GMVS; min-max = 13-65) | | | | | | | | |
| T1 (pre.) | 43 | 39 | 45 | 35 | 43 | 48 | 55 | 56 |
| T2 (post.) | **19** | **27** | **39** | 32 | **21** | **40** | **36** | 52 |
| T3 (1. month) | **19** | **29** | **39** | 32 | **35** | **40** | **37** | **46** |
| T4 (3. month) | **18** | **29** | - | **26** | **20** | **41** | **36** | **36** |
| Depression (min-max = 7-28) | | | | | | | | |
| T1 (pre.) | 14 | 15 | 17 | 21 | 26 | 23 | 18 | 28 |
| T2 (post.) | **8** | **8** | 15 | **16** | **11** | **18** | **9** | 26 |
| T3 (1. month) | **8** | **9** | 17 | **9** | **18** | **15** | **11** | 28 |
| T4 (3. month) | **7** | **10** | - | **10** | **12** | 21 | **10** | **19** |
| Anxiety (min-max = 7-28) | | | | | | | | |
| T1 (pre.) | 15 | 14 | 14 | 12 | 14 | 22 | 13 | 24 |
| T2 (post.) | **9** | 15 | 16 | 11 | **9** | **15** | 12 | 22 |
| T3 (1. month) | **9** | **8** | 13 | **9** | **10** | **14** | **10** | 22 |
| T4 (3. month) | **9** | **7** | - | **9** | **10** | 19 | **9** | **13** |
| Stress (min-max = 7-28) | | | | | | | | |
| T1 (pre.) | 19 | 17 | 16 | 23 | 28 | 28 | 19 | 26 |
| T2 (post.) | **12** | 15 | 20 | **13** | **16** | **25** | **12** | 25 |
| T3 (1. month) | 19 | **10** | 14 | **10** | **19** | **16** | **14** | 24 |
| T4 (3. month) | **12** | **11** | - | **11** | **18** | **23** | **11** | **13** |
| System Usability Scale (min-max = 10-50) | 41 | 43 | 42 | 50 | 49 | 50 | 50 | 50 |

formation on whether the method under investigation produces the expected effects in the target population (Ting et al., 2017). However, a content analysis was performed for qualitative data. In the first and last sessions of the intervention program, the participants were asked to evaluate in writing how and in what way the loss they experienced had an impact on their lives. Compared to the first written task, it was expected that the participants would include more positive content in the last closing session with the effect of the intervention program. We expected that more positive content would take place in the "stuck points", which are an obstacle to the grieving process, and show themselves in structures such as thoughts, feelings, and behaviours and themes such as "meaning-making" from a more general point of view. In this context, content analysis was carried out to evaluate the relevant themes systematically. Thus, we aimed to support the changes in the grief intensity and related psychological symptoms of the participants after the intervention with qualitative and quantitative data. Two clinical psychologists evaluated the same content and then reached a consensus on different views. These data were analyzed using MAXQDA (VERBI Software, 2020).

## RESULTS

The preliminary findings of our program in the proof-of-concept (POC) study design are based on the data

**Table 2. Content Analysis of Participants' 1st and 10th Session Responses**

| Participant & Sessions | | Thoughts | | Feelings | | Behaviours | | Meaning | | Total | | TGI-SR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Negative or Positive | | | | | | | | | | | |
| | | - | + | - | + | - | + | - | + | - | + | T1 | T2 |
| P1 | 1. | 9 | 4 | 10 | - | 5 | 5 | 2 | 1 | **26** | 10 | **58** | **34** |
| | 10. | 2 | 4 | 5 | 2 | 1 | - | - | 5 | **8** | 11 | | |
| P2 | 1. | 5 | 1 | 4 | 4 | 4 | 0 | 2 | 2 | **15** | 7 | **57** | **38** |
| | 10. | 2 | 2 | - | 1 | - | 4 | 1 | - | **3** | 7 | | |
| P3 | 1. | 7 | 1 | 5 | 1 | 1 | 1 | 1 | 4 | **14** | **7** | 63 | 51 |
| | 10. | 1 | 7 | 1 | 5 | - | 3 | - | 1 | **2** | **16** | | |
| P4 | 1. | 5 | 3 | 7 | 1 | 5 | - | 6 | 2 | **23** | **6** | **69** | **48** |
| | 10. | - | 1 | 2 | 2 | 1 | 5 | 3 | 2 | **6** | **10** | | |
| P5 | 1. | 5 | 5 | 4 | 1 | 5 | 6 | 3 | 1 | **17** | 13 | **66** | **29** |
| | 10. | 1 | 4 | 1 | - | 1 | 1 | - | 1 | **3** | 6 | | |
| P6 | 1. | 5 | 1 | 4 | - | 5 | - | 3 | - | **17** | **1** | **62** | **42** |
| | 10. | 3 | 4 | - | 4 | 3 | 1 | - | 1 | **6** | **10** | | |
| P7 | 1. | 8 | 5 | 8 | 1 | 3 | 4 | 2 | 2 | **21** | **12** | **71** | **38** |
| | 10. | 3 | 11 | 10 | 2 | - | 5 | - | 4 | **13** | **22** | | |
| P8 | 1. | 9 | - | 2 | - | 1 | - | 10 | - | **22** | - | 80 | 76 |
| | 10. | 1 | 6 | 5 | 1 | - | 4 | - | 1 | **6** | **12** | | |

of eight participants who completed the 10-session program. In addition to the basic information of the participants, the total scores of traumatic grief, grief and meaning reconstruction, global meaning violations, depression, anxiety, and stress levels are presented in Table 1 (See also Figure-2-7). However, it should be stated that evaluations are performed in descriptive nature, and main impressions only from the preliminary results are presented here.

As detailed in the Table 1, it is noteworthy that many psychological symptoms of the participants except for two (P3 and P8), decreased considerably following the 10-session intervention and during the follow-up periods. In particular, the traumatic grief scores of these two participants in the post-test and follow-up measurements did not fall below the median score (47 points), which is the criterion for inclusion in the program. However, the symptoms of the remaining participants (75%) have fallen below this limit as expected.

In terms of grief and meaning reconstruction scores, noteworthy increases were observed in both the post-test and follow-up measurements in half of the participants (P4, P5, P6, and P7). However, we found others reported similar scores between the measurement times. Looking at the scores of global meaning violations, decreases were clearly observed for seven of the eight participants (88 however there was a clear decrease in the scores of P4 at time T4. In particular, decrease was prominent in the scores of the first participant (P1). Regarding DASS-21 scores, there was a more consistent change in depression levels compared to stress and anxiety. Depression scores of six participant (75%) decreased considerably between the pre-post and follow up measurements except for two (P3 and P8). In terms of anxiety levels, the decreases in six participants were remarkable, although not as significant as depression. In addition, the course of stress levels continued, as did other measures such as depression and anxiety. The decrease in stress levels was clear and regular, except for P3 and P8. In addition, the depression, anxiety and stress scores of P8 only changed clearly at time T4. Finally, the SUS reflects the participants' views on the usefulness of the website. The overall scores were averaged 4 and above (1 = strongly disagree to 5 = strongly agree). All participants stated that they found the online system substantially useful and practical.

### *Results of the Content Analysis*

The written content was evaluated under four thematic titles (thought, feeling, behavior, and meaning) to reflect a positive or negative expression (Table 2). At the end of the programme, it was observed that the total number of negative expressions decreased significantly for all participants, including P3 and P8, even though their traumatic grief scores did not fall below the inclusion criteria (47 points). Below are examples of statements related to each negative theme, respectively:

(i) “This pang of conscience will always be with

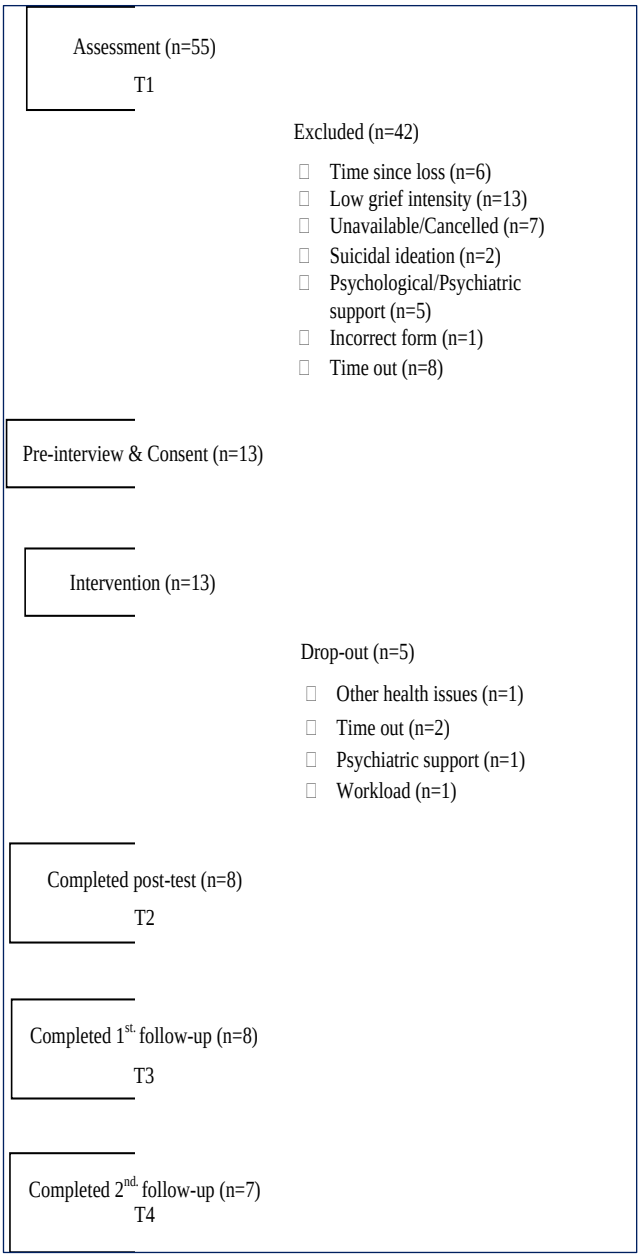


**Figure 1. Intervention Program Flowchart**

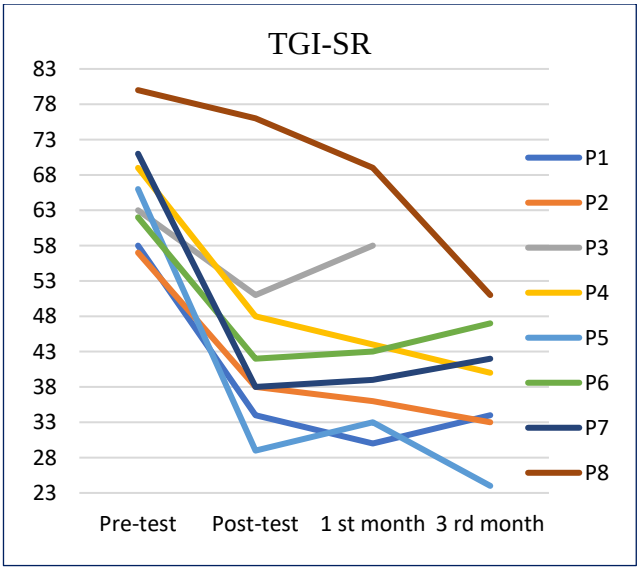


**Figure 2. Traumatic Grief Scores at Different Time Points**

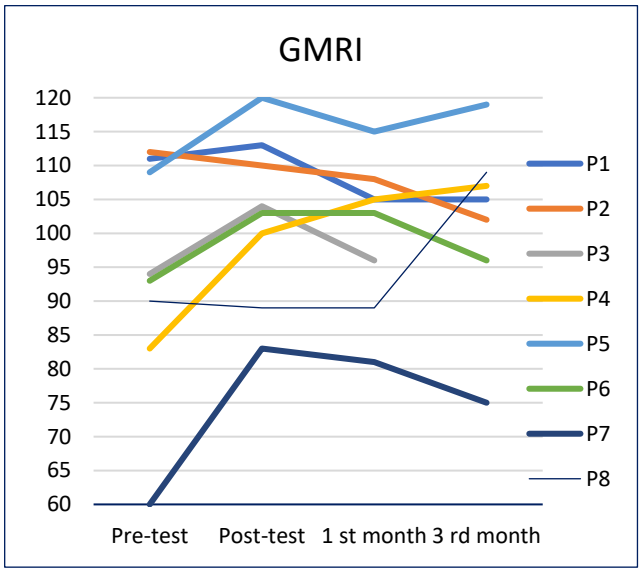


**Figure 3. Grief and Meaning Reconstruction Scores at Different Time Points**

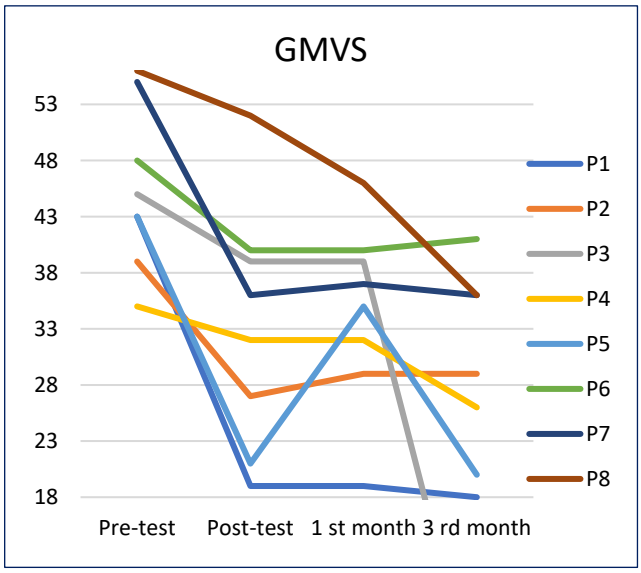


**Figure 4. Global Meaning Violation Scores at Different Time Points**

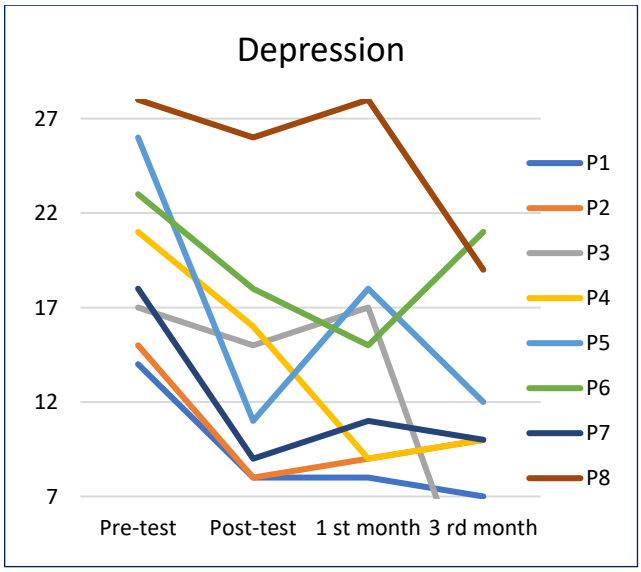


**Figure 5. Depression Scores at Different Time Points**

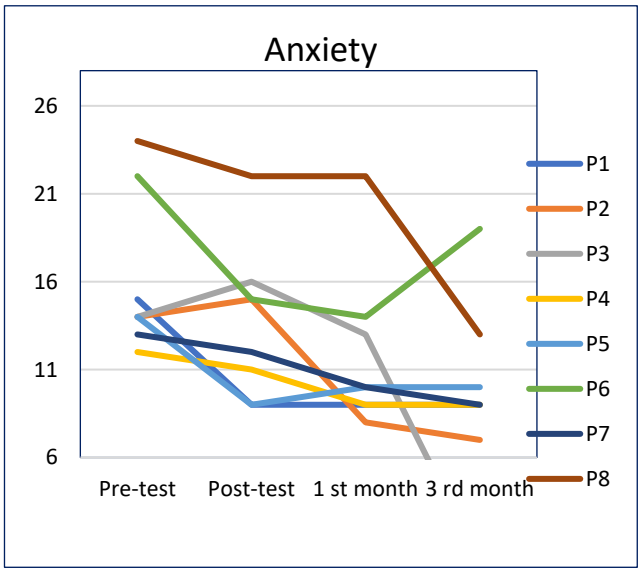


**Figure 6. Anxiety Scores at Different Time Points**

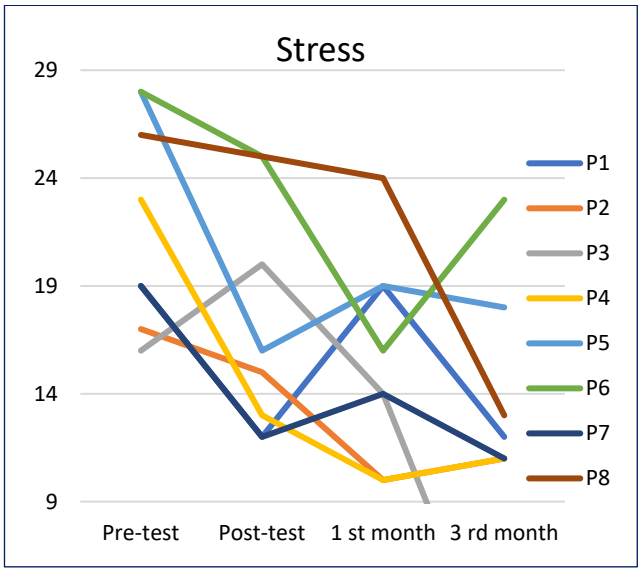


**Figure 7. Stress Scores at Different Time Points**

me for the rest of my life. No matter how logical it is. She died feeling abandoned, my dear mother, my sunshine." (negative thought), (ii) "I have no one left to share my feelings, thoughts, sit down and talk to. I don't even have the luxury of being sick anymore." (negative thought).

(i) "Going to places where she would normally be without him pulls me to the down afterward. Being still using the things that she used and sitting at home, it's like my brain is on fire sometimes." (negative feeling).

(i) "After his death, I felt a strange emptiness and the desire to avoid our common shares was overwhelming. It was as if I wanted not to see it and bury our shares with it." (negative behavior), (ii) "I still cannot use the sentence "My mother is dead." that sentence seems so cruel to me." (negative behavior).

(i) "All this has led me to a deep revolt. To the meaninglessness of life. Everything is going to be even worse now." (negative meaning), (ii) "Maybe it's so meaningless, but as if my life has no end and all my pain is deserved." (negative meaning).

Looking at the positive content, there was an increase in the positive expressions for five of the eight participants (P3, P4, P6, P7, and P8). On the other hand, the decrease in positive content in the last session was only seen for participant P5. This participant had a significant reduction in the number of negative expressions, as well as prolonged grief scores following the intervention, but the positive content decreased beyond expectations. There was also no remarkable difference in the positive expressions of the remaining participants (P1 and P2). Below are examples of statements related to each positive theme, respectively:

(i) "Sometimes I was even embarrassed to laugh, but gradually I get over it because I know you see me, and I think you want to see me happy." (positive thought).

(i) "… Zeynep is learning Italian, I remember our dreams of being together when I was teaching her Italian; I remember that feeling… I even remember how well." (positive feeling), (ii) I am very well now, I am very happy, my heart is at ease. I really loved you; I saw it once again. I'm glad you were, glad you were." (positive feeling).

(i) "You like the house in Sapanca so much, I was able to go there only two years later, I was able to stay. We were there last week." (positive behavior), (ii) "This is an indescribable and never-ending pain that I have been through, but I am trying to cope with it. I try to hold on to life and be good." (positive behavior).

(i) "… I am no longer the little girl who runs into her father with every problem. It made me really strong because of the situation. Since I know what death means, things that I would be upset about before are so pointless now." (positive meaning).

## DISCUSSION

Interest in internet-based interventions has increased considerably. Undoubtedly, the COVID-19 pandemic and the accompanying developments have a high share in this progress. Our research is the first known study in which an internet-based method has been applied to bereaved individuals in Turkey. In this context, a therapist-supported prolonged grief intervention program was developed and applied to people experiencing intense grief. Findings of the first participant group were included in the current study.

Self-report measures were taken from the participants at four different times regarding traumatic grief, grief and meaning restructuring, global violation of meaning, depression, anxiety, and stress symptoms. Additionally, qualitative content of the first and last sessions was also analyzed.

As expected, substantial improvements were noted in six of the eight (75%) participants for traumatic

grief and global meaning violation scores on the post-test. When follow-up measures were taken into account the number of participants who made progress in terms of both traumatic grief and meaning violation increased (88%). Reducing the symptoms of traumatic grief is the main purpose of the program. The main goals are for bereaved to accept this reality, express their feelings, and reposition the deceased emotionally, and reorganize their new life. In this context, it can be thought that the intervention carried out as a whole had a significant impact on the target. The decrease in prolonged grief symptom was one of the results achieved in other internet-based intervention programs (Brodbeck et al., 2019; Eisma et al., 2015; Kersting et al., 2013). Furthermore, significant reduction in the level of meaning violation scores was also notable. In general, violations are divided into violation of beliefs and violation of goals (Park et al., 2016). It can be thought that the cognitive behavioral intervention step in the program had an important contribution to the restructuring of the violations in the belief system and the ACT-based value-oriented studies in the second half of the program had an important contribution to violation of goals.

However, only half of the participants reported higher scores of grief and meaning reconstruction on post-test and follow-up. GMRI carries out an evaluation of various dimensions (continuing bonds, personal growth, emptiness and meaninglessness, sense of peace, and valuing life) for the meaning of grief. Although the programme included interventions for maladaptive cognitions, maintenance of the bond and valuing life, and also explanations for creating a more realistic and positive meaning through feedbacks, these steps may not be sufficient for change. For example, some statements may require lifelong changes ("Since this loss, I'm a stronger person.", "Since this loss, I'm a more responsible person."), so the two-month intervention program may be insufficient for this change. In the limited evaluation here, only the total score of the GMRI was used to test grief and meaning reconstruction. Therefore, comprehensive and sensitive statistical analysis findings that consider sub-dimensions of the scale will provide much more explicit information on the grief and restructuring of meaning.

In addition, it is noteworthy that the decreases in the depression scores of the participants were quite similar to the traumatic grief. Similarly, the depression scores of participants P3 and P8, whose grief intensity did not change after the intervention, remained the same. Although major depressive disorder and PGD are considered separate problems due to some distinguishing factors (Prigerson et al., 2009), there is also a significant comorbid course between two disorders (He et al., 2014; Schaal et al., 2014). In other internet-based applications based on cognitive-behavioral basis, reductions in depression and anxiety symptoms were also aimed and effective results were observed (Litz et al., 2014; Wagner et al., 2006). In addition, it was observed that this decrease in depression and anxiety symptoms continued in the 1.5-year follow-up measurements in the Interapy intervention (Wagner and Maercker, 2007). Moreover, in some studies, traumatic stress levels were also considered as another comorbid condition to prolonged grief (Kersting et al., 2013; Litz et al., 2014; Wagner et al., 2006). However, in our study, stress levels were evaluated only as the DASS-21 sub-dimension, and prominent reductions in symptom levels were recorded both after the intervention and in the follow-up measurements.

It was also important for us to support the decreases in the scores of four different symptom areas with qualitative data. When the contents of the 1$^{st}$ and 10$^{th}$ sessions of the participants were examined, it was observed that the number of negative contents in the relevant fields decreased in the statements of all participants after the intervention. On the other hand, there was an increase in positive content in five of the eight participants. These findings on content analysis appear to largely parallel the reductions in self-report measures.

The content of the intervention program mainly included cognitive behavioral techniques, but ACT teachings were also included in order to emphasize life values. It was hypothesized that the steps to be taken by people in this regard will facilitate their organization to a new life, make them more active behaviorally and indirectly contribute to the improvement in depressive mood. A parallel decrease in both grief intensity and depression levels is promising for the integration of these two important psychotherapy approaches at some points. In sum, the findings of this study are encouraging, and our internet-based program designed for PGD has some potential for better outcomes.

## Conclusion

The present study carefully examined four basic symptom areas through primary measures (TGI and GMRI) and secondary measures (GMVS and DASS-21). However, it also seems important to evaluate the changes in bereaved individuals more comprehensively with other measures of vegetative symptoms such as eating habits and sleep quality. In addition, the preliminary findings of the study were mainly obtained from female participants and people with the loss of parents and spouses. Therefore, it will be necessary for future studies to show a more balanced distribution in terms of gender and closeness to loss. In addition, since the case series design was preferred in our study, there are also limitations such as not performing a statistical analysis, not having a control group with which we can compare the results, and not being able to generalize the data (Sayre et al., 2017).

Although at a limited level, current study provided the opportunity to see quantitative and qualitative data together. Quantitative data and advanced statistical analysis can provide us with strong evidence of the

effectiveness of intervention programs. However, with these data alone, we arrive at a limited picture of vulnerable groups, especially those who are grieving. At this point, qualitative data provides important advantages. We are able to gain a better understanding of the difficulties experienced by people in bereavement and a good picture of what has changed in their lives. As a result, supporting the reductions we observed in symptoms at the level of scores, as content, increases our belief that this intervention program will yield more effective results. These preliminary indications are very promising for our program and show a way forward for implementing randomized controlled trials using more reliable statistical tests in larger samples.

## DECLARATIONS

***Compliance with Ethical Standards*** All procedures were approved by the Ethics Committee of the Dokuz Eylül University Faculty of Letters (03.12.2020/41-8).

***Conflict of Interest*** All authors declare that there is no conflict of interest regarding the article.

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